the view that the greater the quantity of any specific gene-substance, the greater the pace of development of the particular tissue which develops in response to the stimulating effect of this substance. Development is then conceived as a number of parallel processes, each occurring in response to stimulation by a gene-substance, and each proceeding at a pace determined by the quantity of that substance. Thus all depends upon the relative quantities of the various gene-substances present in the egg and the consequent harmonized reaction-velocities of the corresponding tissues.

Goldschmidt has been able to find a single piece of evidence in support of this theory—namely, in certain colour patterns on the wing of a butterfly he finds that the differently coloured parts of the wing develop at different rates, arriving at maturity at successive dates. It is a somewhat slender observational basis for so vast a theory. But that is not a serious objection. The question is : Is the principle adequate to the enormous demands made upon it ?

Let us reduce the problem to the simplest terms. Suppose the pattern to be that the outer half of the wing is to be red and the inner half blue. We can then state as follows an all-important aspect of the total problem, an aspect which, so far as I can see, Goldschmidt's chemical theory leaves absolutely untouched. The development of the outer half is stimulated by a gene-substance *R,* and that of the inner half proceeds at a slower rate stimulated by

the genie substance *B.* But how does the substance *R* finds its way exclusively to the cells which are to form the outer half, leaving the cells of the inner half to be stimulated to a slower growth and later maturity by the substance *B* ?